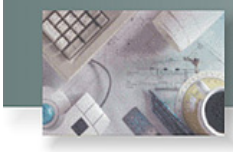

Compliance Component

DEFINITION	
Name	Bridges
Description	A Bridge is a network appliance whose purpose is to segment a network into smaller pieces. Each segment of a bridged network is a broadcast domain. Bridges are used to connect Local Area Network segments at the Data Link Layer of the OSI Model. There are three major types of bridging – Transparent, Source Route and Translational. • Transparent Bridges connect and extend Ethernet (802.3) networks of the same type of transmission media. • Source Route Bridging was developed by IBM for use on Token Ring (802.5) networks. Source Route Bridging uses the entire path in a Routing Information Field to connect two network segments. Source Route bridging can allow for multiple redundant paths in a bridged network. • Translational Bridging is used to connect two dissimilar network topologies (e.g., Ethernet to Token Ring). Bridges use the Spanning-Tree Protocol to facilitate traffic management. Bridges maintain a forwarding table updated through dynamic entries. Forwarding to an unknown address is accomplished by broadcasting out all interfaces except for the one that originated the request.
Rationale	Bridges allow a network to reduce collision domains, connect dissimilar topologies, and expand or extend a flat network structure.
Benefits	Bridges allow the State of Missouri to provide support for legacy media, extend network segments, contain broadcast and collision domains, and translate between different network topologies. Network segmentation allows the network to be reliable, available, scalable and manageable.

ASSOCIATED ARCHITECTURE LEVELS	
Specify the Domain Name	Infrastructure
Specify the Discipline Name	Network
Specify the Technology Area Name	Network Hardware
Specify the Product Component Name	N/a

COMPLIANCE COMPONENT TYPE	
Document the Compliance Component Type	Guideline
Component Sub-type	

COMPLIANCE DETAIL

State the Guideline, Standard or Legislation	Bridges need to have the following compliance components: • Have two or more physical ports • Support the Spanning Tree IEEE 802.1d Standard to prevent bridging loops • Have an operating system • Have an interface for configuration (e.g., Console Port) • Support transparent bridging (Different bridging applications will require different bridge capabilities) • Be capable of dynamic updates to the bridging table • Be capable of Simple Network Management Protocol (SNMP) Bridges may have this additional features: • Translation between different topologies (i.e., Ethernet to Token Ring, or Ethernet to ATM) • Support Source Route Bridging
Document Source Reference #	IEEE 802.1d, IEEE 802.5m, IBM Token Ring Architecture Reference 12, IEEE 802.3

Compliance Sources

Name	Institute of Electrical and Electronics Engineers (IEEE)	*Website*	http://standards.ieee.org/getieee802/portfolio.html
Contact Information	askieee@ieee.org		
Name	International Business Machines (IBM)	*Website*	www.ibm.com/us/
Contact Information	ews@us.ibm.com		

KEYWORDS

List Keywords	Bridge, Transparent Bridging, Translational Bridging, Source Route Bridging, Forward, Spanning-Tree, IEEE 802.1d, IEEE 802.5, IBM Token Ring Architecture 12, IEEE 802.3

COMPONENT CLASSIFICATION

Provide the Classification	☐ *Emerging*	☒ *Current*	☐ *Twilight*	☐ *Sunset*
Sunset Date				

COMPONENT SUB-CLASSIFICATION

Sub-Classification	Date	Additional Sub-Classification Information
☐ *Technology Watch*		
☐ *Variance*		
☐ *Conditional Use*		

Rationale for Component Classification

Document the Rationale for Component Classification	

Migration Strategy

Document the Migration Strategy	

Impact Position Statement			
Document the Position Statement on Impact			
CURRENT STATUS			
Provide the Current Status	☐ *In Development* ☐ *Under Review* ☒ *Approved* ☐ *Rejected*		
AUDIT TRAIL			
Creation Date	3-25-2004	*Date Approved / Rejected*	4/13/04
Reason for Rejection			
Last Date Reviewed		*Last Date Updated*	
Reason for Update			